



Project name: C-TRAN Facility Improvement

Transit agency: Clark County Public Transportation Benefit Area (C-TRAN)

Location: Vancouver, Washington

TIGGER goal: Energy and GHG emissions reduction

FTA region number: X

Award amount: \$1,500,000

Congressional district: WA-3

Funding mechanism:
Recovery Act (ARRA)

C-TRAN Retrofits Facilities with Renewable Energy, Energy Efficiency Technologies

Clark County Public Transportation (C-TRAN) is saving energy and reducing greenhouse gas emissions by installing photovoltaic systems and retrofitting its buildings with lighting upgrades and advanced temperature-control systems along with new, high efficiency mechanical equipment. These improvements were made possible thanks to a \$1.5 million grant from the TIGGER Program and incentives from the Energy Trust of Oregon.

This forward-thinking transit agency is among the pioneers in the transit industry implementing renewable energy and energy efficiency building technologies.

With Johnson Controls, Inc. serving as the design and building contractor, C-TRAN is retrofitting its administration, operations, and maintenance buildings as well as the 99th Street Transit Center at Stockford



Facility Project



Solar Project

C-TRAN, established in 1981, provides fixed-route, commuter express, demand-response, and vanpool services to more than 335,000 residents in Clark County, Washington. Its fleet includes 108 coaches, 58 demand-response vehicles, and 20 vanpool vehicles. As part of its sustainability plan, C-TRAN vehicles use ultra-low-sulfur diesel and emissions-control equipment to reduce fleet-wide particulate emissions. The transit agency also operates 16 diesel-electric hybrid buses, which use 30% less fuel than conventional diesel buses.

Village and Fisher's Landing Transit Center. So far, C-TRAN is reaping the greatest energy savings with retrofits at its older facilities.

Photovoltaic System Installations

Two roof-top photovoltaic systems—a 10-kW system at Fisher's Landing Transit Center and a 10-kW system at the maintenance building—generate renewable-based electricity, reducing energy consumption from traditional sources. Clark Public Utilities helped C-TRAN optimize the connections to the electric grid and establish net metering for the new systems.

Lighting Upgrades

C-TRAN is making the following improvements to its lighting fixtures, bulbs, and controls:

- Fluorescent lighting – retrofit T-12 light fixtures and first generation T-8 lamps containing magnetic/electronic ballasts with new high-performance T-8 lamps and low-watt electronic ballasts
- Building interior/exterior lighting – retrofit old incandescent, mercury-vapor, and metal-halide lights with new T-5 fixtures and install photoelectric-sensor controls
- Parking lot lights – retrofit existing pole lights (250-W high-pressure sodium lights) with new high-output linear fluorescent fixture heads
- Lighting controls – install occupancy sensors for private offices, conference rooms, bathrooms, and other areas.

Impact:

C-TRAN's new rooftop photovoltaic systems and energy efficiency improvements, coupled with its pre-existing sustainability efforts, help the transit agency reduce its carbon footprint and protect air quality in Clark County.

Heating, Ventilation, and Air Conditioning (HVAC) System Improvements

C-TRAN is installing a new digital-direct control system covering the HVAC systems in all of its buildings. Other improvements include new variable-speed ventilation and demand-controlled ventilation (based on carbon dioxide concentrations).

Mechanical upgrades in two C-TRAN buildings are also underway. The administration building is slated to receive a high-efficiency air conditioning unit and a gas-condensing water heater while the maintenance building will undergo a wider variety of improvements—three ventilation units with evaporative cooling and air-to-air heat exchangers, four integrated air conditioning and heating units (gas packs), one high-efficiency gas-fired domestic hot water heater, and a wall-exhaust filter in the shop area.

About TIGGER

The Transit Investment for Greenhouse Gas and Energy Reduction (TIGGER) Program was established in 2009 by the U.S. Department of Transportation's Federal Transit Administration (FTA). Designed to reduce energy use and greenhouse gas emissions in transit agencies around the country, the TIGGER Program made funds available for capital investments that would reduce greenhouse gas emissions or lower the energy use of public transportation systems. An initial \$100 million in American Recovery and Reinvestment Act grants funded 43 competitively-selected transit projects. In 2010, the FTA provided an additional \$75 million in grants to fund 27 new TIGGER projects. These 70 projects are employing a variety of technologies to meet the program goals, including solar installations, building efficiency improvements, wind technology, wayside energy storage for rail, and purchase of more efficient buses. In fiscal year 2011, FTA provided an additional \$49.9 million to continue the program.

For More Information

Clark County Public
Transportation
c-TRAN.com

FTA TIGGER:
www.fta.dot.gov/TIGGER



U.S. Department of Transportation
Federal Transit Administration
1-866-377-8642

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